

In the Claims

1-53. (Canceled)

54. (Original) An optical device having multiple different magnifying powers and a desired astigmatism correction in the same optical surface.

55. (Original) The device of claim 54 where the device is a lens having a front surface and a back surface.

56. (Original) The device of claim 54 where the different magnifying powers lie in two different regions of the device, and the astigmatism in both regions is substantially the desired astigmatism correction.

57. (Original) The device of claim 56 where the device includes a third region having a magnifying power between those of the two regions.

58. (Original) The device of claim 56 where the astigmatism outside the two regions differs from the desired astigmatism correction.

59. (Original) A progressive ophthalmic lens having front and back surfaces, the lens having at least two different desired magnifying powers and a desired astigmatism correction all in one of the surfaces of the lens.

60. (Original) The lens of claim 59 where the one surface is the back surface.

61. (Original) The lens of claim 59 where the lens comprises:
a far-view region where the one surface has a first of the desired power corrections and the desired astigmatism correction;
a near-view region where the one surface has a second of the desired power corrections and the desired astigmatism correction.
62. (Original) The lens of claim 61 where the lens further comprises a corridor region where the one surface has a variable power between the first and second power corrections and the desired astigmatism correction.
63. (Original) The lens of claim 62 where the corridor region lies between the far-view region and the near-view region.
64. (Original) The lens of claim 59 where the other surface has substantially no astigmatism.
65. (Original) The lens of claim 59 where the maximum deviation of the total astigmatism in the lens does not exceed about 75% of the difference between the magnifying powers.
66. (Original) Ophthalmic spectacles comprising a frame and a pair of lenses having front and back surfaces, each lens having at least two different desired magnifying powers and at least one of the lenses further including a desired astigmatism correction in the same surface of the lens as the magnifying powers.
67. (Original) The spectacles of claim 66 where both of the lenses include a desired astigmatism correction in the same surface of the lens as the magnifying powers.
68. (Original) The spectacles of claim 66 where the same surface is a back surface of the lens.

69. (New) The lens of claim 54, where the optical surface forms a toric shape that includes the desired astigmatism correction, with perturbations from the toric shape representing solutions to the equation $B'(\delta, v) = L'(\delta)$, where B' and L' have substantially the forms

$$B'(\delta, v) = \int [2(\alpha + \beta)H_{u_0}(v)H_{u_0}(\delta) - \alpha K_{u_0}(\delta, v)]dxdy$$

$$L'(\delta) = \int 2\beta P - H_{u_0}(u_0))H_{u_0}(\delta)dxdy$$

70. (New) The lens of claim 54, where the entire optical surface forms an atoric shape that includes the desired astigmatism correction, with perturbations from the atoric shape representing solutions to the equation $B'(\delta, v) = L'(\delta)$, where B' and L' have substantially the forms

$$B'(\delta, v) = \int [2(\alpha + \beta)H_{u_0}(v)H_{u_0}(\delta) - \alpha K_{u_0}(\delta, v)]dxdy$$

$$L'(\delta) = \int 2\beta P - H_{u_0}(u_0))H_{u_0}(\delta)dxdy$$

71. (New/Canceled) The method of claim 21 where B and L have substantially the forms

$$B(\delta, v) = \int [2(\alpha + \beta)H_{u_0}(\delta)H_{u_0}(v) - \alpha K_{u_0}(\delta, v)]dxdy$$

$$L(\delta) = \int \left[\alpha K_{u_0}(\delta, u_0) + 2\left(\beta P - \frac{\alpha + \beta}{R}\right)H_{u_0}(\delta) \right]dxdy$$